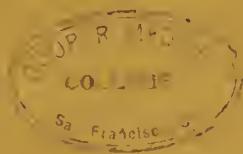


The Discovery of Anesthesia by Ether;

With an Account of the First Operation Performed
Under Its Influence at the Massachusetts Gen-
eral Hospital, and an Extract from the
Record-Book of the Hospital.



BY

WASHINGTON AYER, M. D.

San Francisco, Cal.

Read before the San Francisco Medico-Chirurgical Society.



SACRAMENTO :

Reprinted from the OCCIDENTAL MEDICAL TIMES, March, 1896.

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THE DISCOVERY OF ANESTHESIA BY ETHER; WITH AN
ACCOUNT OF THE FIRST OPERATION PERFORMED UNDER
ITS INFLUENCE AT THE MASSACHUSETTS GENERAL HOS-
PITAL, AND AN EXTRACT FROM THE RECORD-BOOK OF
THE HOSPITAL.

By WASHINGTON AYER, M.D., San Francisco, Cal.

Read before the San Francisco Medico-Chirurgical Society.

This is the golden opportunity to honor the memory of one whose discovery did so much to relieve human suffering, and to give full expression upon this subject. Though we are fifty years away from the date of the discovery, every day's experience should cause us to feel we are living in the presence of the discoverer of the greatest boon ever given to mankind.

Here is an opportunity for the Medico Chirurgical Society of San Francisco, holding its sessions in Cooper Medical College, to secure the possible credit, pride, and honor of publishing to the world for the first time, the full records of that most memorable occasion in the history of medicine, when ether received its sanction and gave "painless surgery" to the world.

The first surgical operation the world ever witnessed, while the patient was under the anesthetic influence of ether, or any other hypnotic, was on the 16th of October, 1846, in the Massachusetts General Hospital, Boston, when Dr. John Collins Warren, Professor of Surgery in the Medical Department of Harvard University, performed a remarkable and successful operation.

This was the dawning of a new era for medicine, and the medical profession, throughout the civilized world, was aroused and received the news as a new revelation. An operation in surgery had been performed with safety and without pain—a discovery had been made that was to bring comfort to the afflicted, and to save mankind from suffering.

Like many of the great discoveries in art, science, and natural philosophy, the discovery that anesthesia could be produced by ether with safety, and that the paralysis of the sensory nerves thus affected would disappear with the return of consciousness, was the outgrowth of an accident. A man called at Dr. Morton's office, suffering from an over-sensitive tooth with a large cavity, which the doctor filled

with lint well saturated with ether, and then covered it over to prevent rapid evaporation. Waiting a short time to have it take effect, he extracted the tooth without pain, and accidentally discovered that the gums along the jaw were still insensible, which led to the discovery of ether by inhalation for the purposes it is now used.

But the problem was not solved without much careful experimental study. Dr. Morton administered ether on a number of occasions to the lower animals, and carefully noticed its effects. On another occasion he shut himself in his room, and at the risk of losing his life, inhaled the ether until consciousness had left him, and while recovering, carefully studied the feelings that came over him. This, to him, was a crucial test of an important discovery, "how to banish pain."

Shortly after the experiment upon himself, a gentleman called at his office, in great suffering—so great that he would not allow the tooth to be touched without taking something to relieve him, and asked to be "mesmerized." Dr. Morton told him he could do something better than that to relieve him, and saturating a handkerchief with ether, told him to inhale it, when, in a short time, he became completely etherized, and the tooth was extracted. As the man returned to consciousness he was asked if he was ready, to which he replied "I am," and when told the tooth "was out," he could not realize such was the case, until his attention was called to it on the floor, and declared he did not suffer. Then Dr. Morton realized that he had performed the first operation ever undertaken while the patient was under the influence of an anesthetic.

In that simple act of extracting a tooth, the world beheld a new revelation to science—the dawn of a new medical philosophy. Pain thenceforth was to be forever banished from the afflicted while under the knife of the surgeon, and the patient was to become oblivious to the world while on the table.

Dr. Oliver Wendell Holmes said, "The fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever."

It was on the 30th day of September, 1846, that Dr. Morton administered ether the first time to produce complete anesthesia, and on the 16th of October, of the same year, Dr. John Collins Warren performed the first surgical operation while the patient was under the influence of ether, and to his sanction it owed its rapid introduction in surgical practice throughout the United States and Europe.

After becoming fully satisfied he had made an important discovery, Dr. Morton communicated with Dr. Warren, and obtained permission to administer his *new ether* to some patient upon the first favor-

able opportunity. On the 14th of October he received a note from Dr. Warren, requesting him to be at the hospital on the Friday following, to administer his ether, and appointed the hour.

The day arrived; the time appointed was noted on the dial, when the patient was led into the operating room, and Dr. Warren, with a board of the most eminent surgeons in the State, were gathered around the sufferer. "All is ready—the stillness oppressive." It had been announced "that a test of some preparation was to be made for which the *astonishing* claim had been made, that it would render the person operated upon free from pain." These are the words of Dr. Warren that broke the stillness.

Those present were incredulous, and as Dr. Morton had not arrived at the time appointed, and 15 minutes had passed, Dr. Warren said, with significant meaning, "I presume he is otherwise engaged." This was followed with a "derisive laugh," and Dr. Warren grasped his knife and was about to proceed with the operation. At that moment Dr. Morton entered a side door, when Dr. Warren turned to him and in a strong voice said, "Well, sir, your patient is ready." In a few minutes he was ready for the surgeon's knife, when Dr. Morton said, "*Your* patient is ready, sir."

Here the most sublime scene ever witnessed in the operating room was presented, when the patient placed himself voluntarily upon the table, which was to become the altar of future fame. Not that he did so for the purpose of advancing the science of medicine, nor for the good of his fellow men, for the act itself was purely a personal and selfish one. He was about to assist in solving a new and important problem of therapeutics, whose benefits were to be given to the whole civilized world, yet wholly unconscious of the sublimity of the occasion or the part he was taking.

That was a supreme moment for a most wonderful discovery, and had the patient died under the operation, science would have waited long to discover the hypnotic effects of some other remedy of equal potency and safety, and it may be properly questioned whether chloroform would have come into use as it has at the present time.

The heroic bravery of the man who voluntarily placed himself upon the table, a subject for the surgeon's knife, should be recorded and his name enrolled upon parchment, which should be hung upon the walls of the surgical amphitheater in which the operation was performed. His name was Gilbert Abbott.

The operation was for a congenital tumor on the left side of the neck, extending along the jaw to the maxillary gland and into the mouth embracing the margin of the tongue. The operation was successful; and when the patient recovered he declared he had suffered

no pain. Dr. Warren then turned to those present and said, "Gentlemen, this is no humbug." "The conquest of pain had been achieved." Surgery was robbed of its terror, and the surgeon greatly assisted in his operation.

Being present on that important occasion, the whole panorama of the procedure is now vividly brought to my memory, and possibly I may be the only one living who witnessed the operation. The crucial experiment had been made; the ordeal was passed, and every heart experienced a thrill of joy. Then Dr. Morton became "the hero of the occasion," and modestly received the congratulations of the eminent gentlemen present, who declared he had made "the world his debtor."

Soon after Dr. Morton learned there was to be an amputation of the leg at the Massachusetts General Hospital for an incurable disease of the knee. The patient was a feeble young woman. He applied for permission to again administer the ether, but was told the managers would not consent unless he would make known his secret, as it was contrary to the code of medical ethics to use or encourage the use of a remedy whose properties were not known.

Through the influence, however, of Dr. Henry J. Bigelow, permission was granted, and the second operation was performed under the influence of ether on the 6th of November, 1846, and was equally successful with the first. After this ether was freely used in all cases of surgery. I also witnessed this second operation, and subsequently had the opportunity of seeing the patient occasionally in the surgical ward of the hospital.

While there was the odor of empiricism, there was also the fruit of blessedness present on that occasion, which bestowed immortality alike upon Warren and Morton; the former disregarding any possible prejudice toward the man, and rising to the highest dignity of the noblest work of God—embodiment of a noble spirit, seeking the advancement of comfort to his fellow men.

The discovery was not that ether possessed anesthetic properties, for that was known long before, but that one might remain insensible under its influence for a long time without harm. This Dr. Morton claimed, but Dr. Warren demonstrated what seemed to be only an assertion from Dr. Morton, that under careful administration the inhalation of ether was safer. This discovery of the safety of ether in producing complete anesthesia may be classed as one of the great civilizing factors of the nineteenth century.

As science advances in any of its many departments, civilization also advances, and the men who make discoveries which add to the security of life, and comfort to the afflicted, are entitled to and



should receive the eulogies of all, for their thoughts and labors in the line of evolution promote civilization. From the hour the great *arcanum* was penetrated and the operation performed, the operating table and the surgeon's knife were no longer dreaded, "and the world was indebted to Dr. Morton for painless surgery."

As early as 1818 Faraday had shown that the inhalation of ether produced anesthetic effects similar to nitrous oxide gas. These effects were regarded as "scientific curiosities," and no one at that time thought of using ether as a valuable therapeutic agent except in fevers. Its employment in surgery then was not thought of, and its great hypnotic agency was not discovered until a quarter of a century later.

To Dr. James Y. Simpson, of Edinburgh, belongs the credit of first using chloroform in midwifery practice in 1847, and its use in such cases soon became general, but a better *moral management* has nearly overcome its use in obstetrics, and it is now employed only in exceptional cases.

As early as 1843 Dr. Horace Wells, of Providence, Rhode Island, employed nitrous oxide gas in the practice of dentistry, but meeting with an accident in its use he laid it aside, and again it was only inhaled for amusement.

About the year 1837, when quite a boy, I remember attending a lecture given by Benjamin Greenleaf, of Bradford, Mass., upon chemistry. He was known in all New England as one of the foremost educators, and when it was announced he would make experiments upon a number of persons with "laughing gas," every one in the county and town was on the *qui vive*, and long before the hour arrived the hall was crowded, so great was the curiosity to witness the experiments. At that date it had no practical utility, and like the latent fire in the oak, it needed friction to bring it into use, as it proved in the contest of Dr. Wells, to share the honors of a great discovery with Dr. Morton.

After the great benefits of ether had been fully established by the discovery of Dr. Morton, he found himself involved in an expensive and cruel litigation. Dr. Wells and Dr. Charles Thomas Jackson, of Boston, an eminent chemist and learned in many departments of science, both of whom had more ambition and selfishness than good taste and integrity, brought suit against Dr. Morton to deprive him of the honor of his discovery, which nearly impoverished him.

Dr. Morton employed such eminent counsel as Daniel Webster and Rufus Choate. The contest was long and bitter, and while Congress was about to award to Dr. Morton \$100,000 for his great benefaction to mankind, the influence of Dr. Jackson in his unworthy cause

defeated the bill for the appropriation, but did not deprive Dr. Morton of the honor which the world so justly bestowed.

" The tissue of the life to be
We weave with colors all our own;
And in the field of destiny
We reap as we have sown."

William Thomas Green Morton, M.D., was born May 9, 1819, in Charlton, Mass., and died July 15, 1868; and now a wreath of the world's affection is laid upon his grave, there to remain fresh in the memory of a grateful people, till the sun shall forget to shine and the stars grow dark in the heavens, in commemoration of the great benefaction he bequeathed to mankind.

The circumstances of his death are briefly told in the January number of the *Bostonian*: "On July 15, 1868, Dr. Morton complained of being ill; went to ride in Central Park with his wife, and while on their return, when near the gates, he complained of severe distress. He got out of the carriage; sat down beside the walk; soon became unconscious, and was carried to St. Luke's Hospital, but was dead before reaching it." A beautiful monument is erected to his memory in Mount Auburn Cemetery.

So great importance was given to the discovery of ether in Europe, that "Dr. Morton received a divided Montyon prize from the French Academy of Sciences; the 'Cross of the Order of Wasa Sweden and Norway;' the 'Cross of the Order Vladimir of Russia,'" and in many other countries he received distinguished expressions of honor. Yet our own country has failed to recognize the wonderful discovery of Dr. Morton with becoming respect.

As we look upon the faces of those who are about to have their limbs severed from their bodies, or to undergo some other fearful operation, under the knife of the surgeon, and witness the calm expression pictured there of confidence that they will have no suffering, who can say the nation should not offer up the morning and evening prayer for the discoverer of ether, who gave "painless surgery" to the world. May we trust the day is not far distant when the American people, as a nation, by their Senators and Representatives in Congress, will honor the memory of Dr. Morton, and may the gold from our mountains contribute to that honor.

Dr. John Collins Warren, to whom the world owes so much, was born in 1778, and died in Boston, Mass., in 1856. He was an eminent surgeon and scholar, and his memory will ever live and be cherished by the medical profession, and his published works will enrich the medical libraries wherever found.

Should a jubilee be held in Boston, which is now being planned for October 16, 1896, in commemoration of the fiftieth anniversary

of the discovery of ether, may the waters of the Pacific and the Atlantic, that wash the two shores of our country, be mingled together on that occasion as an expression of the joys of all nations, which will ever be preserved and live in the baptismal font of affection, and may the lightning bear the tidings over the earth, and revive sweet memories for the dead.

In conclusion, I will repeat that the discovery of Dr. Morton has bequeathed untold blessings to posterity, and the record of the operation by Dr. Warren, for the first time, upon a patient while under the anesthetic influence of ether, will remain a monument to his memory, as enduring as the granite shaft that stands upon the spot, where, in defense of his country and American liberty, a brave Warren fell.

“Lives of great men all remind us,
We may make our lives sublime;
And departing, leave behind us,
Footprints on the sands of time.”

The Record.

On the 7th of January, 1896, I addressed a note to Dr. John Collins Warren, of Boston, also a note to Dr. J. W. Pratt, from whom I received a full and exact copy of the records of the most important event in the history of medicine, and also the following letter from Dr. Warren:

BOSTON, January 16th, 1896.

Dear Dr. Ayer: I need not say that I was much interested in your letter. So far as I am aware, there is no one in these parts who was present on that memorable occasion of October 16, 1846. I have asked Dr. J. W. Pratt, Superintendent of the Massachusetts General Hospital, to send you a copy of the record of the case. Last autumn I unearthed the “Record Book,” and showed it to the hospital staff, most if not all of whom had never seen it. A committee has been formed from the staff, of which I am chairman, to plan some form of celebration for the fiftieth anniversary of the event, next October, but we have not yet decided what form the celebration should take. Dr. William J. Morton, 18 East Twenty-eighth street, New York, is the son of Dr. Morton, and I am going to send your note to him. I hope you will be able to come east next autumn, and join in the celebration. I feel that the Massachusetts General Hospital has a record, which no other hospital in the world has in this respect, and that the problem solved there, in 1846, settled the future of anesthesia. I trust you will send me a copy of your address. Sincerely yours,

Washington Ayer, M.D.

J. COLLINS WARREN.

This letter gives you a knowledge of the interest taken by medical men in the east upon this important subject, and which I thought it eminently proper to call your attention to at the present time. Through the prompt attention of Dr. Morton I have been able to obtain a full history of the discussions upon ether, as far back as 1859, and to speak with authority upon the subject.

The following is the extract from the Record Book of the hospital, and is, I believe, now published for the first time:

Boston, Friday, September 25, 1846.—Gilbert Abbott, age 20,

painter, single; tumor on face. This man had had, from birth, a tumor under the jaw on the left side. It occupies all space anterior to neck, bounded on the inside by median line, on the outside is even with the edge of jaw; below, on a level with the Pomum Adami and in front, tapers gradually as far as anterior edge of jaw; integuments not adherent to it; skin smooth and of natural color; it is uniformly soft, except in center, where a small, hard lump can be felt, corresponding in size and situation with submaxillary gland; can be made to disappear by compression, but seems rather to be displaced than emptied. The edge of the lower jaw bone can be felt, through the tumor, to be irregular. On examination of the inside of the mouth, find a soft, smooth tumor, a hemisphere about 5 lines in diameter, of a livid color, on the left lobe of tongue, about an inch behind tip. That portion of the organ in front and underneath the tumor is of a dark purple color. This tumor is readily emptied by slight pressure, but fills again in 1 or 2 seconds, but not sooner when pressure is made simultaneously upon the external tumor. For distance of 5 lines from angle of mouth on right side the lower lip is of a livid hue. This seems to be a continuation of a stripe, similar in appearance, which extends from angle of jaw on right side about on level of lower teeth; it is about 4 lines wide and slightly raised; its color seems to depend on small spots like granulations, of a livid color, set on mucous membrane of ordinary appearance.

This case is remarkable in the annals of surgery. It was the first surgical operation performed under the influence of ether.

Dr. Warren had been applied to by Mr. Morton, a dentist, with the request that he would try the inhalation of a fluid which, he said, he had found to be effectual in preventing pain during operations upon the teeth. Dr. Warren, having satisfied himself that the breathing of the fluid would be harmless, agreed to employ it when an opportunity presented. None occurring within a day or two in private practice, he determined to use it on this patient. Before the operation began, some time was lost waiting for Mr. Morton, and ultimately it was thought he would not appear. At length he arrived and explained his detention, by informing Dr. Warren that he had been occupied in preparing his apparatus, which consisted of a tube connected with a glass globe. This apparatus he then proceeded to apply, and after 4 or 5 minutes the patient appeared to be asleep, and the operation was performed as herein described. To the surprise of Dr. Warren and the other gentlemen present, the patient did not shrink nor cry out, but during the insulation of the veins, he began to move his limbs and utter extraordinary expressions, and these movements seemed to indicate the existence of pain, but after he had recovered his faculties he said that he had experienced none, but only a sensation like that of scraping the part with a blunt instrument, and he ever afterward continued to say that he had not felt any pain. *Note.*—(The results of this operation led to the repetition of the use of ether in other cases, and in a few days its success was established, and its use resorted to in every considerable operation in the city of Boston and its vicinity.)

Operation by Dr. Warren: The patient having been placed in the

operating chair, in the amphitheater, an incision, $2\frac{1}{2}$ inches in length, was made over the center of external tumor, just beneath the edge of jaw, extending through skin and subcutaneous tissue. A layer of fascia was dissected off and disclosed a congeries of large veins and small arteries. Hemorrhage was slight, no vessel requiring ligation. A curved needle, armed with a ligature, size No. 6, was passed under the mass, and the tumor included, under a knot with considerable compression. The wound was then filled with a small compress and lint and the patient returned to bed.

Patient continued to do well and was discharged well, December 7th. Cicatrix perfect; tumor same size as on entrance, but no vessels to be detected in it. Tumor on tongue not altered, nor is appearance on inside of right cheek. General health much improved.

215 Geary street.

Extract from the Proceedings of the Regular Meeting of the San Francisco Medico-Chirurgical Society, February 3, 1895.

DR. WASHINGTON AYER read a paper entitled, "The Discovery of Anesthesia by Ether; with an Account of the First Operation Performed under its Influence at the Massachusetts General Hospital, and an Extract from the Record-book of the Hospital" [published at p. 121].

On motion of DR. R. W. MURPHY, a vote of thanks was tendered to Dr. Ayer for his interesting communication.

DR. L. C. LANE asked Dr. Ayer to describe the personality of Dr. Warren and of Dr. Morton.

DR. AYER said Dr. Warren was of medium size, perhaps 5 feet 8, and did not weigh more than 150 pounds at that time. He had a great deal of energy and determination in his movements. After 50 years, it is hard to remember all the details of a scene. Dr. Morton was aged about 27. He had been practising dentistry in Boston, and was, he thought, a graduate in medicine.

DR. MURPHY said the paper brought to mind the first operation he had seen under a general anesthetic. It was the first operation done in the west under chloroform. Dr. Brainard, of Chicago, performed the operation. Most of the professors and many outside physicians were present. It was just before Christmas, in 1848, and the operation was the removal of the great toe for frost-bite.

DR. LANE: My memory runs back very much as Dr. Murphy's does. At Peoria, Illinois, I think, I saw an anesthetic given as early as 1848, by Dr. Cooper, and in 1849, while a student of medicine, I administered ether for him in a slight operation on the eye. In Philadelphia, at Jefferson, in 1850 and '51, artificial anesthesia had not yet attained great popularity. The old men were timid, and some of them strongly opposed it. The students had two lectures, one by Dr. John K. Mitchell, who strongly recommended the use of anesthetics, and advised the students to receive with caution most of the notions on the subject then taught in the school. The other was by Dr. Meigs, in 1851, who was very bitterly opposed to the use of anesthetics. He roundly scored those who, to save their patients a little passing pain, would subject them to the risk of losing their lives. It was his annual custom to bring before the class an animal and kill it with an anesthetic, in order to show the danger. I saw him bring a lamb before the class, tie it down, and, saturating a sponge with ether, tightly cover over the head of the animal so as to exclude all air. When the lamb had breathed the ether for a little while, the apparatus was opened and the sponge again saturated with the ether. This was repeated several times, and at the end of the lecture hour when the students were called to another lecture, the animal was carried out of the room still kicking. Probably this was the best possible refutation of Dr. Meigs' views that could have been devised. Meigs opposed, most strenuously, the use of anesthetics in childbirth. He was of the old school, and believed that it was right that woman should suffer in bringing into the world a new soul. It was a sort of retribu-

tion for past faults. In 1850 and '51, I saw many operations where no anesthetic was administered. In the history of this question, I read of the introduction of anesthetics into Germany. Dieffenbach, then the most prominent figure on the surgical stage, the greatest in all Europe, wrote a long article, which was one of the most remarkable that I have ever read—his description of the past and present. He says: "What a terrible thing it is, to put a man into a state of unconsciousness, and to stand before him when he is silent and to cut him. It is appalling." This shows with what wonderful tenacity habits will cling to a strong man. He had worked nearly all his life amid the screams of those who suffered under his knife. Sir James Paget, 15 or 20 years ago, delivered a lecture on the subject of anesthetics, from the British stand-point. He gave four men the credit of their discovery and introduction. Dr. Ayer has mentioned all of them but Dr. Long, of Georgia. It is popularly stated in the South, and Marion Sims claimed it for Long, that he used ether as a general anesthetic in surgery before it was used in the North. Paget said it was very remarkable that each one of these four men had so sad an ending of his life. Wells, who had tried laughing gas, went to Boston and went before the class to demonstrate his methods of causing anesthesia. The students, as usual, pretty wild, began to make a noise. They hooted and hissed. Wells was greatly depressed; he went home and committed suicide. Jackson hastened to Paris, where he received the decoration of the Legion of Honor. He, later, became insane, probably because of his contention with Dr. Morton, and died in an insane asylum. Morton fought for the honor of his discovery, and from my study of the records I think he is really deserving of the credit. After a long struggle it was so decided.

DR. AYER said: In the account of Dr. Morton's death, as given in the *Bostonian*, which was sent him by the son of Dr. Morton, he, while riding in the park, complained of great suffering, soon became unconscious, and was removed to St. Luke's Hospital, but died before reaching there.

DR. STANLEY STILLMAN said he would like to ask for more details of the scene of the operation. How about the apparatus? How was the operation taken by the students?

DR. AYER said that the apparatus was rather complicated, and he could not remember the details of it after so many years; he would refer to the record. The students received it with the greatest expressions of enthusiasm. Cheer after cheer rang through the operating hall.

DR. EMMET RIXFORD said that in conversation recently with Barton Hill, who is well known to most San Franciscans, he had been greatly interested in Mr. Hill's description of the first operation performed under anesthetic in Canada. It was in 1847—"ship fever year" they called it, because of the terrible epidemic of typhus which then occurred—Dr. Crawford, surgeon to the Montreal General Hospital, invited Mr. Hill, then a student of medicine apprenticed to the doctor, to assist in an operation he was about to perform under ether. There were present a large number of medical men, among whom was Dr. Archibald Hall. The patient remained motionless till the operation—amputation of the thigh—was completed. When he became conscious he inquired when the operation was going to begin, and on being told that it was already completed, he refused to believe it, but sat bolt upright, looked at the short stump for a moment, and then fell back in a faint from which they had some difficulty in resuscitating him. A second operation (amputation of the breast) similarly successful under ether, settled the question of anesthetics in Canada.

DR. LANE: I think Dr. Ayer is to be congratulated on having been present at that hour when the most important thing performed on the American continent was done. I regard this as the greatest thing; it is of more value to humanity than anything else that has ever taken place in our country.

